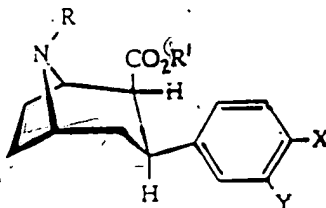


In the Claims:

Please cancel claims 2, 3, 8, 9, 31, and 35 without prejudice.

1. (Amended) An iodinated neuroprobe for mapping monoamine reuptake sites, the iodinated neuroprobe being of the formula:



wherein

R = [a C<sub>n</sub>H<sub>2n+1</sub> group where n=0-6, an alkenyl group,] a monofluoroalkyl group including <sup>n</sup>F where n=18, or 19 [, or a <sup>m</sup>C<sub>n</sub>H<sub>2n+1</sub> group where n=1-6 and where m=11 or 14 for at least one <sup>m</sup>C];

R' = a C<sub>n</sub>H<sub>2n+1</sub> group where n=0-6 [, a p-iodophenylmethyl group, a p-iodophenylethyl group, a phenylmethyl group, or a phenylethyl group];

X = an isotope of F, an isotope of Cl, an isotope of Br, an isotope of I, CH<sub>3</sub>, or Sn(R''<sub>1</sub>R''<sub>2</sub>R''<sub>3</sub>);

R''<sub>1</sub> = a C<sub>n</sub>H<sub>2n+1</sub> group where n=1-6, or an aryl group;

R''<sub>2</sub> = a C<sub>n</sub>H<sub>2n+1</sub> group where n=1-6, or an aryl group;

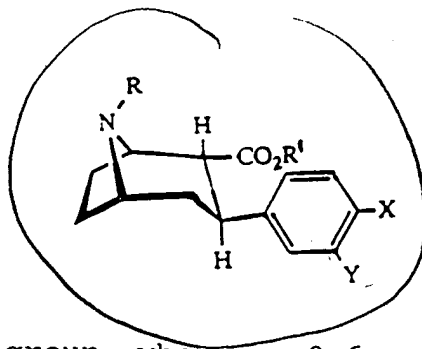
R''<sub>3</sub> = a C<sub>n</sub>H<sub>2n+1</sub> group where n=1-6, or an aryl group; and

Y = H [only if X is an isotope of I, or R' is a p-iodophenylmethyl group, or R' is a p-iodophenylethyl group, else Y= an isotope of I].

5. (Amended) An iodinated neuroprobe for mapping monoamine reuptake sites, the iodinated neuroprobe being of the formula:

T300X

PF wherein



P/B R = [a  $C_nH_{2n+1}$  group where  $n=0-6$ , an alkenyl group,] a monofluoroalkyl group including  $^{19}F$  where  $n=18$  or  $19$  [, or a  $^{14}mC_nH_{2n+1}$  group where  $n=1-6$  and where  $m=11$  or  $14$  for at least one  $^{14}mC$ ];

P/B R' = a  $C_nH_{2n+1}$  group where  $n=0-6$  [, a p-iodophenylmethyl group, a p-iodophenylethyl group, a phenylmethyl group, or a phenylethyl group];

P/I X = an isotope of F, an isotope of Cl, an isotope of Br, an isotope of I,  $CH_3$ , or  $Sn(R''_1R''_2R''_3)$ ];

P/I R''<sub>1</sub> = a  $C_nH_{2n+1}$  group where  $n=1-6$ , or an aryl group;

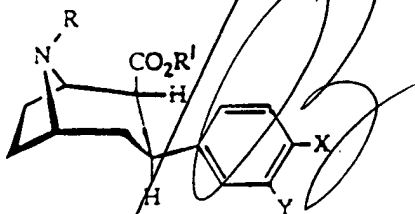
B R''<sub>2</sub> = a  $C_nH_{2n+1}$  group where  $n=1-6$ , or an aryl group;

L R''<sub>3</sub> = a  $C_nH_{2n+1}$  group where  $n=1-6$ , or an aryl group;

Y = H [only if X is an isotope of I, or R' is a p-iodophenylmethyl group, or R' is a p-iodophenylethyl group, else Y = an isotope of I].

29. (Amended) A kit for preparing an iodinated neuroprobe for mapping monoamine reuptake sites, the kit comprising:

a precursor of the formula:



wherein

*A5*  
*Conced.*

R = [a  $C_nH_{2n+1}$  group where  $n=0-6$ , and alkenyl group,] a monofluoroalkyl group or H;

R' = a  $C_nH_{2n+1}$  group where  $n=0-6$  [, a p-iodophenylmethyl group, a p-iodophenylethyl group, a phenylmethyl group, or a phenylethyl group];

X = [F, Cl, Br,] I or Sn(R"<sub>1</sub>R"<sub>2</sub>R"<sub>3</sub>);

R"<sub>1</sub> = a  $C_nH_{2n+1}$  group where  $n=1-6$ , or an aryl group;

R"<sub>2</sub> = a  $C_nH_{2n+1}$  group where  $n=1-6$ , or an aryl group;

R"<sub>3</sub> = a  $C_nH_{2n+1}$  group where  $n=1-6$ , or an aryl group; and

Y = H [only if X is I, or R' is a p-iodophenylmethyl group, or R' is a p-iodophenylethyl group, else Y = I]; and  
an oxidizing agent,

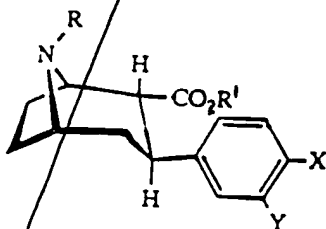
wherein the precursor and the oxidizing agent are to be reacted in the presence of a radioisotope source.

*A6*  
*cont.*

32. (Amended) The kit of claim 29 wherein the radioisotope source is a reagent [containing  $^{18}F$ ] of the formula  $[FC_nH_{2n}X] \text{ } ^{18}FC_nH_{2n}L$  where  $n=0-6$  and [X] L is a leaving group.

33. (Amended) A kit for preparing an iodinated neuroprobe for mapping monoamine reuptake sites, the kit comprising:

a precursor of the formula:



wherein

R = [a  $C_nH_{2n+1}$  group where  $n=0-6$ , and alkenyl group,] a monofluoroalkyl group or H;

R' = a  $C_nH_{2n+1}$  group where  $n=0-6$  [, a p-iodophenylmethyl group, a p-iodophenylethyl group, a phenylmethyl group, or a phenylethyl group];

X = [F, Cl, Br,] I or  $Sn(R''_1R''_2R''_3)$ ;

R''<sub>1</sub> = a  $C_nH_{2n+1}$  group where  $n=1-6$ , or an aryl group;

R''<sub>2</sub> = a  $C_nH_{2n+1}$  group where  $n=1-6$ , or an aryl group;

R''<sub>3</sub> = a  $C_nH_{2n+1}$  group where  $n=1-6$ , or an aryl group; and

Y = H [only if X is I, or R' is a p-iodophenylmethyl group, or R' is a p-iodophenylethyl group, else Y = I]; and

an oxidizing agent,

wherein the precursor and the oxidizing agent are to be reacted in the presence of a radioisotope source.

36. (Amended) The kit of claim 33 wherein the radioisotope source is a reagent [containing  $^{18}F$ ] of the formula  $[FC_nH_{2n}X] \text{ } ^{18}FC_nH_{2n}L$  where  $n=0-6$  and [X] L is a leaving group.